IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/530,619
Applicant	:	PESZYNSKI, Michael
Filed	:	07 April 2005
TC/A.U.	:	3739
Confirmation	:	6981
Examiner	:	NIA, Alireza
Atty. Docket	:	US-020387

Title: CONTROL MECHANISM FOR AN ENDOSCOPE

APPEAL BRIEF

U.S. Patent and Trademark Office
Customer Window, Mail Stop **Appeal Brief - Patents**
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

In response to the FINAL Office Action dated 2 July 2008 and Advisory Action dated 15 October 2008, finally rejecting pending claims 1-10 and 12-22, and in support of the Notice of Appeal filed on 3 November 2008, Applicant hereby respectfully submits this Appeal Brief.

REAL PARTY IN INTEREST

According to an assignment recorded at Reel 016917, Frame 0434, Koninklijke Philips Electronics N.V., owns all of the rights in the above-identified U.S. patent application.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences related to this application or to any related application, nor will the disposition of this case affect, or be affected by, any

other application directly or indirectly.

STATUS OF CLAIMS

Claim 11 is canceled.

Claims 1-10 and 12-22 are pending in the application.

Claims 1-10 and 12-22 all stand rejected.

Accordingly, the claims on appeal are claims 1-10 and 12-22.

STATUS OF AMENDMENTS

There are no pending amendments with respect to this application.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention is directed to a control mechanism for an endoscope.[1]

Accordingly, as broadly recited in claim 1, a control mechanism (FIGs. 1-4 – element 10; page 6, line 11) for an endoscope having a flexible shaft comprises: a frame (FIGs. 1-4 – element 16; page 6, line 25); first and second movement transmission devices (FIGs. 1-2 – elements 12/14; page 6, lines 18-24) for causing adjustment of a distal end of the flexible shaft; a first control knob (FIGs. 1-2 – element 18; page 6, lines 25-26); a first rotatable pinion shaft (FIGs. 2-4 – element 22; page 6, line 29) rotatably mounted on said frame and fixed to said first control knob, said first pinion shaft engaging with said first movement transmission device such that upon rotation of said first control knob, said first pinion shaft rotates and said first movement transmission device is actuated (page 6, line 31 – page 7, line 2); a second control knob (FIGs. 1-2 – element 20; page 6, line 26) rotatable independent of said first control knob (page 6, line 27); a second rotatable pinion

1 In the description to follow, citations to various reference numerals, figures, and corresponding text in the specification are provided solely to comply with Patent Office rules. It should be understood that these reference numerals, figures, and text are exemplary in nature, and not in any way limiting of the true scope of the claims. It would therefore be improper to import anything into any of the claims simply on the basis of **exemplary** language that is provided here only under the obligation to satisfy Patent Office rules for maintaining an Appeal.

shaft (FIGs. 2-4 – element 28; page 7, line 3) fixed to said second control knob and coaxial with said first pinion shaft, said second pinion shaft engaging with said second movement transmission device such that upon rotation of said second control knob, said second pinion shaft rotates and said second movement transmission device is actuated (page 7, lines 6-11); an intermediate shaft (FIGs. 2-4 – element 34; page 7, lines 25-29) arranged at least partially inside of said second pinion shaft and at least partially around said first pinion shaft, said intermediate shaft being arranged to reduce transmission of torque between said first and second pinion shafts such that rotation of one of said first and second pinion shafts does not cause rotation of the other of said first and second pinion shafts (page 7, lines 29-31), said intermediate shaft being axially unrestrained such that movement of said intermediate shaft in an axial direction is possible (page 8, lines 9-10); and first ball bearings (FIGs. 2-4 – elements 52/54; page 9, lines 21-26) arranged between said intermediate shaft and one of said first and second pinion shafts for enabling rotation of said one of said first and second pinion shafts relative to said intermediate shaft.

As broadly recited in claim 14, a control and sealing mechanism for an endoscope (FIGs. 1-4 – element 10) having a flexible shaft comprises: a frame(FIGs. 1-4 – element 16; page 6, line 25); first and second movement transmission devices (FIGs. 1-2 – elements 12/14; page 6, lines 18-24) for causing adjustment of a distal end of the flexible shaft; a first control knob (FIGs. 1-2 – element 18; page 6, lines 25-26); a first rotatable pinion shaft (FIGs. 2-4 – element 22; page 6, line 29) rotatably mounted on said frame and fixed to said first control knob, said first pinion shaft engaging with said first movement transmission device such that upon rotation of said first control knob, said first pinion shaft rotates and said first movement transmission device is actuated (page 6, line 31 – page 7, line 2); a second control knob (FIGs. 1-2 – element 20; page 6, line 26) rotatable independent of said first control knob; a second rotatable pinion shaft (FIGs. 2-4 – element 28; page 7, line 3) fixed to said second control knob and coaxial with said first pinion shaft, said second pinion shaft engaging with said second movement transmission device such that upon rotation of said second control knob, said second pinion shaft rotates and said second movement transmission device is actuated

(page 7, lines 6-11); an intermediate shaft (FIGs. 2-4 – element 34; page 7, lines 25-29) arranged at least partially inside of said second pinion shaft and at least partially around said first pinion shaft; at least one O-ring (FIGs. 2-4 – elements 42/46; page 7, lines 29-29) arranged in contact with said intermediate shaft and one of said first and second pinion shafts such that torque transmitted by said first or second pinion shaft to said at least one O-ring is applied to said intermediate shaft and transmission of torque between said first and second pinion shafts is reduced (page 8, line 23 – page 9, line 2), said at least one O-ring being arranged to provide a rotary seal between said intermediate shaft and said one of said first and second pinion shafts (page 8, lines 13-21); and first ball bearings (FIGs. 2-4 – elements 52/54; page 9, lines 21-26) arranged between said intermediate shaft and one of said first and second pinion shafts for enabling rotation of said one of said first and second pinion shafts relative to said intermediate shaft.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on Appeal are: (1) the rejections of claims 1-8 and 12-21 under 35 U.S.C. § 103 over Krauter U.S. Patent 5,464,007 ("Krauter") in view of van der Heide U.S. Patent 5,388,568 ("van der Heide") and further in view of Opie U.S. Patent 4,825,850 ("Opie"); (2) the rejections of claims 9-10 under 35 U.S.C. § 103 over Krauter, van der Heide, Opie and Hall U.S. Patent 3,788,303 ("Hall"); and (3) the rejection of claim 22 under 35 U.S.C. § 103 over Krauter, van der Heide, Opie and Rio U.S. Patent Publication 2003/0219184 ("Rio").

ARGUMENTS

(1) Claims 1-8 and 12-21 are Patentable over Krauter, van der Heide and Opie

Claim 1

Among other things, the mechanism of claim 1 includes an intermediate shaft arranged at least partially inside of the second pinion shaft and at least partially around the first pinion shaft, the intermediate shaft being arranged to reduce transmission of torque between the first and second pinion shafts such that rotation of one of the first and second pinion shafts does not cause rotation of the other of the

first and second pinion shafts, the intermediate shaft being axially unrestrained such that movement of the intermediate shaft in an axial direction is possible.

No combination of the cited art would ever produce a mechanism including an intermediate shaft with this combination of features.

At the outset, the Examiner fairly admits that Krauter does not disclose a mechanism that includes an intermediate shaft. So the Examiner cites van der Heide as disclosing an intermediate shaft as element 6a.

However, claim 1 recites that the intermediate shaft is axially unrestrained such that movement of the intermediate shaft in an axial direction is possible.

Van der Heide does not disclose that its "intermediate shaft" 6a is axially unrestrained such that movement of the intermediate shaft in an axial direction is possible. Indeed, to the contrary, van der Heide specifically and repeatedly teaches that element 6a is a **fixed** sleeve.

Without mentioning or addressing this, the Examiner instead states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified element 6a in van der Heide to be contrary to van der Heide's specific teaching of a fixed sleeve, so that instead it would be axially unrestrained such that movement in an axial direction is possible:

> "*in order to have made it possible for the intermediate shaft to have been separable, adjustable, rotatable, or even in order to have made it easier to repair the control mechanism as desired, since it has been held that the separation of elements, where removability would be desirable, is a design consideration within the skill of the art. In re Dulberg, 283 F.2d 522, 129 USPQ 348 (CCPA 1961). It has also been held that adjustability, where desirable, is a modification that is within the skill of the art. In re Stevens, 212 F.2d 197, 101 USPQ 284 (CCPA 1954)*."

Applicant respectfully traverses the proposed modification of van der Heide's fixed sleeve 6a to make it axially unrestrained such that movement in an axial

direction is possible, for at least the following reasons.

First, the recited feature has nothing to do with "*removability*," and so the citation of In re Dulberg is inapplicable.

Second, the Examiner fails to provide any objective evidence whatsoever that anyone of skill in the art at the time the invention was made would have recognized any such "*removability*" to be desirable with respect to van der Heide's fixed sleeve 6a. So the proposed modification is improper. KSR International Co. v. Teleflex Inc., 550 U.S. at ___, 82 USPQ2d 1385, 1396 (Fed. Cir. 2007) (quoting In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)).

Third, the recited feature at issue does not recite "*adjustability*." In re Stevens pertained to a fishing rod, where the claims at issue specifically recited an adjustable grip. The feature at issue here is intermediate shaft being axially unrestrained such that movement of the intermediate shaft in an axial direction is possible. There is no recitation of any adjustability in this feature. Therefore, whatever the continued vitality of In re Stevens may be today, it is inapplicable here.

Fourth, a mere statement that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish prima facie obviousness. M.P.E.P. § 2143.01(IV).

For at least these reasons, Applicant respectfully traverses the proposed modification of van der Heide's fixed sleeve 6a to make it axially unrestrained such that movement in an axial direction is possible, so as to try to read on Applicant's claim 1.

Also among other things, the mechanism of claim 1 includes first ball bearings arranged between the intermediate shaft and one of the first and second pinion shafts for enabling rotation of the one of the first and second pinion shafts relative to the intermediate shaft.

The Examiner fairly admits that no combination of Krauter and van der Heide would produce a mechanism including these features.

However, the Examiner states that Opie discloses ball bearings, and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Krauter and van der Heide to include first ball bearings

arranged between the intermediate shaft and one of the first and second pinion shafts for enabling rotation of the one of the first and second pinion shafts relative to the intermediate shaft:

> "*in order to have provided an improved endoscope having easily removable wheels so that the wheels can be either sterilized or discarded after use, facilitating the longevity and durability of the endoscope device for long period of time which results in long-term cost savings for outpatient surgical centers*."

Applicant respectfully traverses the proposed modification of Krauter and van der Heide, and also submits that it would not produce the mechanism of claim 1 with its first ball bearings arranged between the intermediate shaft and one of the first and second pinion shafts for enabling rotation of the one of the first and second pinion shafts relative to the intermediate shaft, for at least the following reasons.

First, Opie does not disclose or suggest ball bearings arranged between an intermediate shaft and either a first or second pinion shaft for enabling rotation of the one of the first and second pinion shafts relative to the intermediate shaft. In that regard:

i) ball bearings 160 are not arranged between an intermediate shaft and either a first or second pinion shaft;

ii) elements 150,154 are not any intermediate shaft;

iii) the citation of the entire text of cols. 7 & 8 is deemed non-responsive as it is facially apparent that at least the first 51 lines of col. 7 do not relate to any of the elements cited in the Examiner;

iv) ball bearings 244,246 are not arranged between an intermediate shaft and either a first or second pinion shaft;

v) "*two surfaces*" ≠ an intermediate shaft and either a first or second pinion shaft;

Second, the Examiner does not provide any evidence that the addition of ball bearings arranged between an intermediate shaft and either a first or second pinion

shaft for enabling rotation of the one of the first and second pinion shafts relative to the intermediate shaft is either a necessary or a sufficient condition to "*provide an improved endoscope having easily removable wheels so that the wheels can be either sterilized or discarded after use, facilitating the longevity and durability of the endoscope device for long period of time which results in long-term cost savings for outpatient surgical centers,"* and so there is no rational underpinning for the proposed modification. KSR International Co. v. Teleflex Inc., 550 U.S. at ___, 82 USPQ2d 1385, 1396 (Fed. Cir. 2007).

So, Applicant respectfully traverses the proposed combination of Opie with Krauter and van der Heide as having no articulated rationale supported by rational underpinnings, and furthermore respectfully submits that any such combination in any event would not produce the mechanism of claim 1.

Accordingly, for at least these reasons, Applicant respectfully submits that claim 1 is patentable over the cited art.

Claims 2-8 and 12-13

Claims 2-8 and 12-13 depend from claim 1 and are deemed patentable over the cited art for at least the reasons set forth above with respect to claim 1.

Claim 14

Among other things, the control and sealing mechanism of claim 14 includes first ball bearings arranged between an intermediate shaft and either first or second pinion shafts for enabling rotation of the first or second pinion shaft relative to the intermediate shaft.

As explained above with respect to claim 1, Applicant respectfully submits that no combination of the cited art would ever produce a control and sealing mechanism including this combination of features.

Accordingly, for at least these reasons, Applicant respectfully submit that claim 14 is patentable over the cited art.

Claims 15-21

Claims 15-21 depend from claim 14 and are deemed patentable over the cited art for at least the reasons set forth above with respect to claim 14.

(2) Claims 9-10 are Patentable over Krauter, van der Heide, Opie & Hall

Claims 9 and 10 depend from claim 1. Applicant respectfully submits that Hall does not remedy the shortcomings of Krauter, van der Heide, and Opie as set forth above with respect to claim 1, so claims 9 and 10 are deemed patentable for at least the same reasons as claim 1.

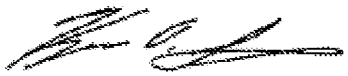
(3) Claim 22 is Patentable over Krauter, van der Heide, Opie & Rio

Claim 22 depends from claim 1. Applicant respectfully submits that Rio does not remedy the shortcomings of Krauter, van der Heide, and Opie as set forth above with respect to claim 1, so claim 22 is deemed patentable for at least the same reasons as claim 1.

For all of the foregoing reasons, Applicant submits that claims 1-10 and 12-22 are all patentable over the cited prior art. Therefore, Applicant respectfully requests that the rejections of claims 1-10 and 12-22 be withdrawn, the claims be allowed, and the application be passed to issue.

Respectfully submitted,

VOLENTINE & WHITT



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CLAIMS APPENDIX

1. (Previously Presented) Control mechanism for an endoscope having a flexible shaft, comprising:

a frame;

first and second movement transmission devices for causing adjustment of a distal end of the flexible shaft;

a first control knob;

a first rotatable pinion shaft rotatably mounted on said frame and fixed to said first control knob, said first pinion shaft engaging with said first movement transmission device such that upon rotation of said first control knob, said first pinion shaft rotates and said first movement transmission device is actuated;

a second control knob rotatable independent of said first control knob;

a second rotatable pinion shaft fixed to said second control knob and coaxial with said first pinion shaft, said second pinion shaft engaging with said second movement transmission device such that upon rotation of said second control knob, said second pinion shaft rotates and said second movement transmission device is actuated;

an intermediate shaft arranged at least partially inside of said second pinion shaft and at least partially around said first pinion shaft, said intermediate shaft being arranged to reduce transmission of torque between said first and second pinion shafts such that rotation of one of said first and second pinion shafts does not cause rotation of the other of said first and second pinion shafts, said intermediate shaft being axially unrestrained such that movement of said intermediate shaft in an axial direction is possible;

first ball bearings arranged between said intermediate shaft and one of said first and second pinion shafts for enabling rotation of said one of said first and second pinion shafts relative to said intermediate shaft.

2. (Original) The control mechanism of claim 1, further comprising at least one O-ring arranged on said first pinion shaft and in contact with said intermediate shaft

such that torque transmitted by said first pinion shaft to said at least one O-ring is applied to said intermediate shaft.

3. (Original) The control mechanism of claim 2, wherein said first pinion shaft includes at least one circumferential groove for receiving a respective one of said at least one O-ring.

4. (Original) The control mechanism of claim 2, wherein said at least one O-ring is arranged to provide a rotary seal between said first pinion shaft and said intermediate shaft.

5. (Original) The control mechanism of claim 1, further comprising at least one O-ring arranged on said intermediate shaft and in contact with said second pinion shaft such that torque transmitted by said second pinion shaft to said at least one O-ring is applied to said intermediate shaft.

6. (Original) The control mechanism of claim 5, wherein said intermediate shaft includes at least one circumferential groove for receiving a respective one of said at least one O-ring.

7. (Original) The control mechanism of claim 5, wherein said at least one O-ring is arranged to provide a rotary seal between said second pinion shaft and said intermediate shaft.

8. (Original) The control mechanism of claim 1, further comprising a first O-ring arranged on said first pinion shaft and in contact with said intermediate shaft such that torque transmitted by said first pinion shaft to said at least one O-ring is applied to said intermediate shaft and a second O-ring arranged on said intermediate shaft and in contact with said second pinion shaft such that torque transmitted by said second pinion shaft to said at least one O-ring is applied to said intermediate shaft.

9. (Original) The control mechanism of claim 1, further comprising fixing means for fixing said intermediate shaft against rotation.

10. (Original) The control mechanism of claim 9, wherein said fixing means comprise a pin attached to said frame and extending into a slot formed in said intermediate shaft.

12. (Previously Presented) The control mechanism of claim 1, further comprising a nut fixed to said frame, additional ball bearings arranged between said second pinion shaft and said frame for rotatably mounting said second pinion shaft to said frame and at least one hard spacer arranged between said nut and said additional ball bearings to allow floating of said intermediate shaft.

13. (Previously Presented) The control mechanism of claim 1, further comprising a nut fixed to said frame, additional ball bearings arranged between said second pinion shaft and said frame for rotatably mounting said second pinion shaft to said frame and a preload spring arranged between said nut and said additional ball bearings, said additional ball bearings being preloaded.

14. (Previously Presented) Control and sealing mechanism for an endoscope having a flexible shaft, comprising:

a frame;

first and second movement transmission devices for causing adjustment of a distal end of the flexible shaft;

a first control knob;

a first rotatable pinion shaft rotatably mounted on said frame and fixed to said first control knob, said first pinion shaft engaging with said first movement transmission device such that upon rotation of said first control knob, said first pinion shaft rotates and said first movement transmission device is actuated;

a second control knob rotatable independent of said first control knob;

a second rotatable pinion shaft fixed to said second control knob and coaxial with said first pinion shaft, said second pinion shaft engaging with said second movement transmission device such that upon rotation of said second control knob, said second pinion shaft rotates and said second movement transmission device is actuated;

an intermediate shaft arranged at least partially inside of said second pinion shaft and at least partially around said first pinion shaft;

at least one O-ring arranged in contact with said intermediate shaft and one of said first and second pinion shafts such that torque transmitted by said first or second pinion shaft to said at least one O-ring is applied to said intermediate shaft and transmission of torque between said first and second pinion shafts is reduced, said at least one O-ring being arranged to provide a rotary seal between said intermediate shaft and said one of said first and second pinion shafts; and

first ball bearings arranged between said intermediate shaft and one of said first and second pinion shafts for enabling rotation of said one of said first and second pinion shafts relative to said intermediate shaft.

15. (Original) The mechanism of claim 14, wherein said at least one O-ring is arranged on said intermediate shaft and in contact with said second pinion shaft such that torque transmitted by said second pinion shaft to said at least one O-ring is applied to said intermediate shaft.

16. (Original) The mechanism of claim 15, wherein said intermediate shaft includes at least one circumferential groove for receiving a respective one of said at least one O-ring.

17. (Original) The mechanism of claim 14, wherein said at least one O-ring is arranged on and in contact with said first pinion shaft such that torque transmitted by said first pinion shaft to said at least one O-ring is applied to said intermediate shaft.

18. (Original) The mechanism of claim 17, wherein said first pinion shaft

includes at least one circumferential groove for receiving a respective one of said at least one O-ring.

19. (Original) The mechanism of claim 14, wherein said at least one O-ring comprises a first O-ring arranged on said intermediate shaft and in contact with said second pinion shaft such that torque transmitted by said second pinion shaft to said at least one O-ring is applied to said intermediate shaft, and a second O-ring arranged on and in contact with said first pinion shaft such that torque transmitted by said first pinion shaft to said at least one O-ring is applied to said intermediate shaft.

20. (Previously Presented) The mechanism of claim 14, further comprising a nut fixed to said frame, additional ball bearings arranged between said second pinion shaft and said frame for rotatably mounting said second pinion shaft to said frame and at least one hard spacer arranged between said nut and said additional ball bearings to allow floating of said intermediate shaft.

21. (Previously Presented) The mechanism of claim 14, further comprising a nut fixed to said frame, additional ball bearings arranged between said second pinion shaft and said frame for rotatably mounting said second pinion shaft to said frame and a preload spring arranged between said nut and said additional ball bearings, said additional ball bearings being preloaded.

22. (Previously Presented) The control mechanism of claim 1, further comprising second ball bearings arranged between said intermediate shaft and another one of said first and second pinion shafts for enabling rotation of said other one of said first and second pinion shafts relative to said intermediate shaft.

EVIDENCE APPENDIX

{None}

RELATED PROCEEEDINGS APPENDIX

{None}